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| 10/577,495 | 01/22/2007 | Mitsuhiro Nishina | 050203-0151 | 6774 |

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| EXAMINER |
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GISSEL, GUNNAR J

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| ART UNIT | PAPER NUMBER |
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2856

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05/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/577,495 | Applicant(s) NISHINA ET AL. | |
| | Examiner Gunnar J. Gissel | Art Unit 2856 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>02/29/2008 09/10/2007 09/21/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The applicant does not disclose how a concentration of less than 0% is to be measured. A conventional concentration measurement measures the amount of a substance within a solution, either by mol or volume, and finds what percentage of the total amount the substance comprises. It is not possible for there to be less than zero of a substance contained in a solution.

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 3 recites "a display device that displays visibly the discrimination result by said control unit is disposed". The context of the word 'disposed' seems to indicate that either the display device or the control

Art Unit: 2856

unit is disposed, but does not make it clear which one is disposed. Furthermore, “disposed,” in this context would most probably mean “to get rid of, throw out” (disposed. Dictionary.com. The American Heritage® Dictionary of the English Language, Fourth Edition. Houghton Mifflin Company, 2004.

<http://dictionary.reference.com/browse/dispensed> (accessed: May 15, 2008).).

Applicant’s disclosure does not illustrate how the control unit or display device are disposed, which one is disposed, or what form of disposing is used.

However, for the purposes of examination, I am assuming that the claim means the display device is disposed somewhere, and is a visual display device. It should be noted that claim 3 does not explicitly have the meaning I am assuming, and could be reasonably interpreted in, at least, the two ways I have enumerated above.

4. Claim 2 recites the limitation “said control unit counts up the frequency” in applicant’s disclosure. “The frequency” is the first mention of frequency. There is insufficient antecedent basis for this limitation in the claim.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The applicant discusses a control unit using these criteria: “the concentration detected by said concentration detecting device is equal to or less than 0%, or more than 0% and also equal to or less than the predetermined

Art Unit: 2856

concentration, or more than the predetermined concentration, respectively.”

These criteria do not illustrate a physically possible range, or even a range that is non-expansive. As was discussed above, less than 0% concentrations are not possible to obtain in a solution, as a ‘debt’ of some molecules has no physical analog. Also, <0%, =0%, >0%, <predetermined concentration and >predetermined concentration, seem to amount to a range of negative infinity-positive infinity% concentration. This indicates that the control unit is constantly discriminating what, and how much liquid is in the storage tank, but fails to point out what particular physically achievable range is desired.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application 2007/0054409 to Shinichi Inoue et al. (Inoue).

Regarding Claims 1 and 4, Inoue discloses a liquid discriminating apparatus comprising: a concentration detecting device that detects concentration of a liquid reducing agent based on heat transfer characteristics

Art Unit: 2856

between two positions spaced apart from each other (Inoue, paragraph 11), in a storage tank that stores a liquid supplied to a nitrogen oxide reduction catalytic converter disposed in an engine exhaust system (Inoue, paragraph 4); and a control unit which discriminates a type of the liquid in said storage tank, wherein said control unit discriminates that the liquid in said storage tank is water (Inoue, control unit 72), or that the liquid in said storage tank is a liquid reducing agent (Inoue, paragraph 4, urea is clearly the reducing agent discussed in Applicant's disclosure, and Inoue uses it a reducing agent, as well), or that said storage tank is empty, when the concentration detected by said concentration detecting device is equal to or less than 0%, or more than 0% and also equal to or less than the predetermined concentration, or more than the predetermined concentration, respectively (Inoue, paragraphs 50, 53, control unit 72). Inoue's control unit detects a present concentration and is operable between 0-100% concentration, the physically possible range for concentration, and can distinguish when the concentration is between 0% and a predetermined value (inclusive), between the first predetermined value and a second predetermined value (inclusive), or between the second predetermined value and 100% (inclusive).

2. The apparatus according to claim 1, wherein said control unit counts up the frequency at which the concentration detected by said concentration detecting device becomes equal to or less than 0%, and when the counted frequency reaches the predetermined frequency or more, discriminates that the liquid in said storage tank is the water respectively (Inoue, paragraphs 50, 53, control unit 72). Inoue's control unit detects a present concentration and is

Art Unit: 2856

operable between 0-100% concentration, the physically possible range for concentration, and can distinguish when the concentration is between 0% and a predetermined value (inclusive), between the first predetermined value and a second predetermined value (inclusive), or between the second predetermined value and 100% (inclusive).

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Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue with teachings from US Patent Application Publication 2007/0163238 to Michael Gerlach (Gerlach).

Inoue discloses an apparatus, but does not disclose that the display device is disposed.

Gerlach discloses a display device that displays visibly the discrimination result by said control unit is disposed (Gerlach, display device 58).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Gerlach with the device of Inoue because Gerlach teaches an easy to use indicator to indicate when the solution is at a non-optimal value (Gerlach, display device 58).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Application Publication 2007/0202019 concerns a reducing agent container. US Patent Application Publication 2007/0199308 concerns an emissions apparatus for an engine. US Patent 7,100,367 concerns a device for the treatment of exhaust gas. US Patent 2007/0006639 concerns a urea detector and associated emissions hardware.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gunnar J. Gissel whose telephone number is (571)270-3411. The examiner can normally be reached on Mon-Fri, 7:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571)272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GJG/

5/15/2008

/Hezron Williams/

Supervisory Patent Examiner, Art Unit 2856